Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Non-recommended prostate-specific antigen (PSA)-based screening in older men: percentage of men 70 years and older who were screened unnecessarily for prostate cancer using PSA-based screening.

Source(s)

National Committee for Quality Assurance (NCQA). HEDIS 2017: Healthcare Effectiveness Data and Information Set. Vol. 1, narrative. Washington (DC): National Committee for Quality Assurance (NCQA); 2016. various p. [288 references]

National Committee for Quality Assurance (NCQA). HEDIS 2017: Healthcare Effectiveness Data and Information Set. Vol. 2, technical specifications for health plans. Washington (DC): National Committee for Quality Assurance (NCQA); 2016. various p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of men 70 years and older who were screened unnecessarily for prostate cancer using prostate-specific antigen (PSA)-based screening.

Rationale

Prostate cancer is the most commonly diagnosed form of non-skin cancer among men in the United States (U.S.) (Howlander et al., 2011; Li et al., 2012). The current lifetime risk for a male to develop prostate cancer is 15.9 percent (U.S. Preventive Services Task Force [USPSTF], 2012); however, the risk of dying from it is 2.9 percent (Hoffman, 2013). According to the National Cancer Institute's (NCI) Surveillance Epidemiology and End Results data (2005 to 2009), the median age at diagnosis for men is 67 years of age (American Urological Association [AUA], 2009). Because diagnosis is closely linked to screening, the apparent incidence of prostate cancer increases with increasing age until 84,

after which it declines. Although prostate cancer is the fifth leading cause of all cancer deaths in the U.S., the survival rates are relatively high, with 23 deaths per 100,000 per year. Localized prostate cancer has a five-year survival rate of 100 percent, and approximately 81 percent of prostate cancers are diagnosed at the local stage (NCI, 2010).

The primary tests used to screen for prostate cancer are the digital rectal exam (DRE), which allows for physical examination of the prostate, and the prostate-specific antigen (PSA) blood test, which evaluates presence of an antigen in a patient's blood (Centers for Disease Control and Prevention [CDC], 2013). PSA-based screening is commonly used in lieu of DRE. The cost of a PSA test can range from $70 to $400. Approximately 30 million men undergo PSA testing in the U.S. annually, translating to an estimated $3 billion in associated direct costs (Kale et al., 2013; Korenstein et al., 2012).

However, there are a variety of issues associated with PSA-based screening. Research has shown PSA-based screening is not focal, which can result in misdiagnoses and unnecessary performance of diagnostic procedures (AUA, 2009). The likelihood of PSA tests producing false-positive results is also relatively high, with some studies yielding 80 percent false-positive results when the cut-off range used is between 2.5 and 4.0 ng/mL (Schröder et al., 2009). Men with false-positive results not only experience negative psychological effects, but are also more likely to have follow-up testing in the following year, including one or more biopsies (Kale et al., 2013).

In addition to issues of test specificity and sensitivity, prostate cancer is subject to over-diagnosis, the detection of a condition that would have remained silent and caused no morbidity during a patient's lifetime. Two large-scale PSA-based screening studies reveal over diagnosis rates ranging from 17 to 50 percent (Kale et al., 2013; Korenstein et al., 2012). The main harms result from complications due to biopsies and treatment that typically follow abnormal results. Studies have shown that out of 1,000 men screened, 110 (11 percent) would be diagnosed with prostate cancer, and roughly half of those diagnosed experience complications from treatment (NCI, 2012). Complications include erectile dysfunction, urinary incontinence, serious cardiovascular events, deep vein thrombosis, and pulmonary embolism (NCI, 2012).

The AUA (2009) recommends against routine PSA screening in men age 70 and older or any man with a life expectancy of less than 10 to 15 years. The USPSTF (2012), however, recommends against PSA-based screening for prostate cancer in men in the general U.S. population, regardless of age, stating that the overall benefits do not outweigh the associated harms with testing, subsequent diagnosis, procedures and treatment. This recommendation updates the previous (2008) USPSTF recommendation against PSA-based screening among men 75 and older. Evidence supporting the performance of screening among men younger than 75 was limited at the time.

Evidence for Rationale

American Urological Association Education and Research, Inc. Prostate-specific antigen best practice statement: 2009 update. Linthicum (MD): American Urological Association Education and Research, Inc.; 2009. 82 p. [264 references]

Centers for Disease Control and Prevention (CDC). Prostate cancer screening. [internet]. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2013 [accessed 2013 Jan 04].

Hoffman R. Screening for prostate cancer. [internet]. Waltham (MA): UpToDate, Wolters Kluwer Health; 2013.

Howlander N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK. SEER cancer statistics review, 1975-2008. [internet]. Bethesda (MD): National Cancer Institute (NCI); 2011 [accessed 2013 Apr 01].

Kale MS, Bishop TF, Federman AD, Keyhani S. Trends in the overuse of ambulatory health care services in the United States. JAMA Intern Med. 2013 Jan 28;173(2):142-8.

Korenstein D, Falk R, Howell EA, Bishop T, Keyhani S. Overuse of health care services in the United States: an understudied problem. Arch Intern Med. 2012 Jan 23;172(2):171-8. PubMed

Li J, Djenaba JA, Soman A, Rim SH, Master VA. Recent trends in prostate cancer incidence by age, cancer stage, and grade, the United States, 2001-2007. Prostate Cancer. 2012;:EPub. PubMed

National Cancer Institute (NCI). Prostate-specific antigen (PSA) test. [internet]. Bethesda (MD): National Institutes of Health (NIH); 2012 [accessed 2015 Jan 20].

National Cancer Institute (NCI). SEER stat fact sheets: prostate cancer. [internet]. Bethesda (MD): National Institutes of Health (NIH); 2010 [accessed 2014 Jan 01].

National Committee for Quality Assurance (NCQA). HEDIS 2017: Healthcare Effectiveness Data and Information Set. Vol. 1, narrative. Washington (DC): National Committee for Quality Assurance (NCQA); 2016. various p. [288 references]

Schroder FH, Hugosson J, Roobol MJ, Tammela TL, Ciatto S, Nelen V, Kwiatkowski M, Lujan M, Lilja H, Zappa M, Denis LJ, Recker F, Berenguer A, Maattanen L, Bangma CH, Aus G, Villers A, Rebillard X, van der Kwast T, Blijenberg BG, Moss SM, de Koning HJ, Auvinen A, ERSPC Investigators. Screening and prostate-cancer mortality in a randomized European study. N Engl J Med. 2009 Mar 26;360(13):1320-8. PubMed

U.S. Preventive Services Task Force (USPSTF). Screening for prostate cancer. [internet]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2012 [accessed 2013 Jan 03].

Primary Health Components

Prostate cancer; prostate-specific antigen (PSA)-based screening

Denominator Description

Medicare-enrolled men age 70 years and older as of December 31 of the measurement year (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

A prostate-specific antigen (PSA)-based screening test performed during the measurement year (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

All HEDIS measures undergo systematic assessment of face validity with review by measurement advisory panels, expert panels, a formal public

comment process and approval by the National Committee for Quality Assurance's (NCQA's) Committee on Performance Measurement and Board of Directors. Where applicable, measures also are assessed for construct validity using the Pearson correlation test. All measures undergo formal reliability testing of the performance measure score using beta-binomial statistical analysis.

Evidence for Extent of Measure Testing

Rehm B. (Assistant Vice President, Performance Measurement, National Committee for Quality Assurance, Washington, DC). Personal communication. 2015 Mar 16. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Managed Care Plans

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age 70 years and older

Target Population Gender

Male (only)

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

December 31 of the measurement year

Denominator Sampling Frame

Enrollees or beneficiaries

Denominator (Index) Event or Characteristic

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Medicare-enrolled men age 70 years and older as of December 31 of the measurement year

Note:

- Men must have been continuously enrolled during the measurement year.
- *Allowable Gap*: No more than one gap in enrollment of up to 45 days.

Exclusions

- Members in hospice are excluded from the eligible population.
- Men who had a diagnosis for which prostate-specific antigen (PSA)-based testing is clinically appropriate. Any of the following meet criteria:
  - Prostate cancer diagnosis (Prostate Cancer Value Set) any time during the member's history through December 31 of the measurement year.
  - Dysplasia of the prostate (Prostate Dysplasia Value Set) during the measurement year or the year prior to the measurement year.
  - A PSA test (PSA Test Exclusion Value Set) during the year prior to the measurement year, where laboratory data indicate an elevated result (greater than 4.0 ng/mL).
  - Dispensed prescription for 5-alpha reductase inhibitor (5-ARI) during the measurement year (refer to table PSA-A in the original measure documentation for a list of 5-ARIs).

Value Set Information
Measure specifications reference value sets that must be used for HEDIS reporting. A value set is the complete set of codes used to identify the service(s) or condition(s) included in the measure. Refer to the NCQA Web site to purchase HEDIS Volume 2, which includes the Value Set Directory.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
A prostate-specific antigen (PSA)-based screening test (PSA Tests Value Set) performed during the measurement year. Do not include denied claims.

Note: Although denied claims are not included when assessing the numerator, all claims (paid, suspended, pending and denied) must be included when identifying the eligible population.

Exclusions
Unspecified

Value Set Information
Measure specifications reference value sets that must be used for HEDIS reporting. A value set is the complete set of codes used to identify the service(s) or condition(s) included in the measure. Refer to the NCQA Web site to purchase HEDIS Volume 2, which includes the Value Set Directory.

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Non-recommended PSA-based screening in older men (PSA).

Measure Collection Name

HEDIS 2017: Health Plan Collection

Measure Set Name

Effectiveness of Care

Measure Subset Name

Overuse/Appropriateness

Submitter

National Committee for Quality Assurance - Health Care Accreditation Organization

Developer

National Committee for Quality Assurance - Health Care Accreditation Organization

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

National Committee for Quality Assurance's (NCQA's) Measurement Advisory Panels (MAPs) are composed of clinical and research experts with an understanding of quality performance measurement in the particular clinical content areas.

Financial Disclosures/Other Potential Conflicts of Interest

In order to fulfill National Committee for Quality Assurance's (NCQA's) mission and vision of improving health care quality through measurement, transparency and accountability, all participants in NCQA's expert panels are required to disclose potential conflicts of interest prior to their participation. The goal of this Conflict Policy is to ensure that decisions which impact development of NCQA's products and services are made as objectively as possible, without improper bias or influence.

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2016 Oct

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates previous versions:

- National Committee for Quality Assurance (NCQA). HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 1, narrative. Washington (DC): National Committee for Quality Assurance (NCQA); 2015. various p.
- National Committee for Quality Assurance (NCQA). HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 2, technical specifications for health plans. Washington (DC): National Committee for Quality Assurance (NCQA); 2015. various p.

Measure Availability

Source available for purchase from the National Committee for Quality Measurement (NCQA) Web site .

For more information, contact NCQA at 1100 13th Street, NW, Suite 1000, Washington, DC 20005; Phone: 202-955-3500; Fax: 202-955-3599; Web site: www.ncqa.org .

Companion Documents

The following is available:

- National Committee for Quality Assurance (NCQA). HEDIS 2017: Healthcare Effectiveness Data and Information Set. Vol. 2, technical update. Washington (DC): National Committee for Quality Assurance (NCQA); 2016 Oct 3. 12 p.

For more information, contact the National Committee for Quality Assurance (NCQA) at 1100 13th Street, NW, Suite 1000, Washington, DC 20005; Phone: 202-955-3500; Fax: 202-955-3599; Web site: www.ncqa.org .

NQMC Status

This NQMC summary was completed by ECRI Institute on January 14, 2015.

This NQMC summary was updated by ECRI Institute on February 9, 2016 and again on October 13, 2016.

Copyright Statement

Production

Source(s)

National Committee for Quality Assurance (NCQA). HEDIS 2017: Healthcare Effectiveness Data and Information Set. Vol. 1, narrative. Washington (DC): National Committee for Quality Assurance (NCQA); 2016. various p. [288 references]

National Committee for Quality Assurance (NCQA). HEDIS 2017: Healthcare Effectiveness Data and Information Set. Vol. 2, technical specifications for health plans. Washington (DC): National Committee for Quality Assurance (NCQA); 2016. various p.

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